APRIL 3, 1922

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THOMAS-MORSE AIRCRAFT CORPORATION

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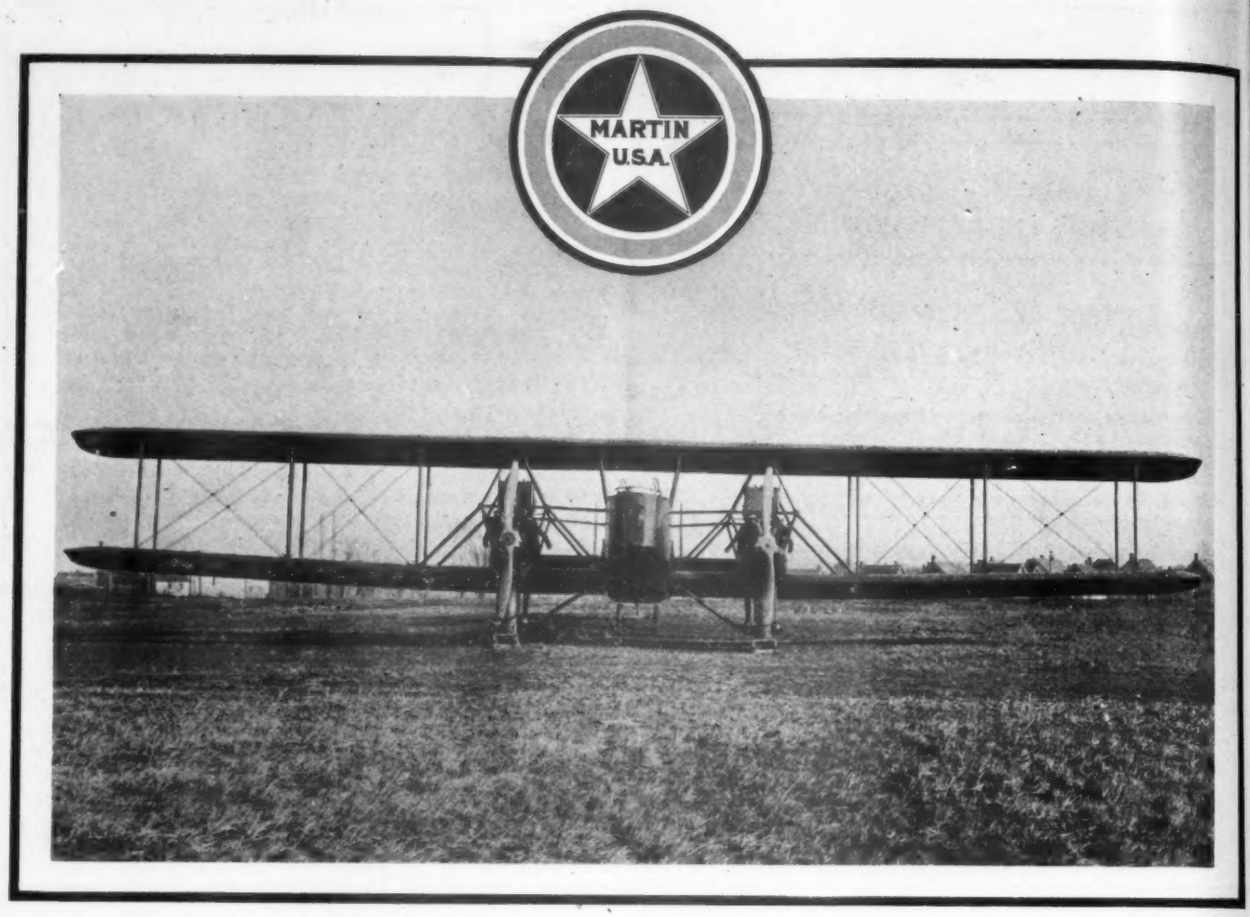

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Vol. XII APRIL 3, 1922 No. 14

The Accident of the Miss Miami

IT is to be hoped that the loss of the commercial flying boat Miss Miami will impress upon Congress the all too urgent need of federal air legislation. This need we have voiced ever since the Armistice with an insistence which may have seemed hasty and premature to some. Yet in taking this attitude we were merely expressing the views of the great majority of the aeronautical world, whose authorized representatives repeatedly urged Congress to create a government agency which would be empowered to register and inspect aircraft, and to license their operators. Steamships and motorboats are subject to government inspection and to the observance of safety rules, yet civil aircraft have been operating for the last two years without having to fulfill any such requirements.

Unfortunately Congress has been extremely slow to act on this matter. Under the pretext that the various bills providing for federal air legislation required to be improved, the matter was postponed from one session to another, with the result that we are still without government regulation of civil aviation. The Wadsworth-Hicks bill, which has been passed by the Senate, and which has the endorsement of all civil and military air authorities, has yet to be passed by the House of Representatives.

If we now look for the lessons to be learned from this accident, the desirability of equipping seaplanes with radio is perhaps the most evident. We say "desirability" as we believe there are some practical difficulties in making such a provision compulsory for small machines, such as two or three seaters. Even the International Air Convention makes the use of radio compulsory only for aircraft carrying ten or more passengers.

But whether radio is carried or not, we believe that each civil seaplane should possess the means of making at least three of the six conventional distress signals listed in the Notice to Aviators No. 2, 1922, issued by the Hydrographic Office, U. S. Navy, and reprinted elsewhere in this issue. A sound apparatus such as a hand operated Klaxon, a Very pistol, and a number of flares represent so little additional dead weight, that no seaplane should put to sea without them. The use of the "distant signal" and of the international code flags, on the other hand, would require special equipment to be effective, such as a small, collapsible signalling mast. This could, however, easily be fitted to the larger flying boats, and its use would probably be found convenient not only for making distress signals but also for other purposes, such as requiring medical assistance, observing quarantine regulations, etc.

But however useful all these provisions will prove in an emergency, the best insurance aircraft have against untoward incidents is an efficient maintenance and inspection. These will, in the case of reputable enterprises, always be more exacting than the maximum of the government provisions, but the latter will nevertheless be needed as long as some overconfident pilots will rely on their luck rather than on the silent work performed in the hangars.

Commercial Success

THE report to stockholders of the Wright Aeronautical Corp., which is published in this issue, affords an interesting insight into the economics of aeronautical engine manufacture. The figures show that the total income of the firm has considerably increased with respect to last year, and that, after allowing for federal taxes the rate of profit on operations was about 15 per cent on sales.

This rate of profit, while not high for commercial work, is very remarkable if one considers that the firm conducted during the past year a large amount of experimental work on engines. From its start the Wright Aeronautical Corp. has maintained an efficient engineering department, entirely capable of developing any type of engine for which there may be a demand. This policy, of course, entailed a considerable expense, but the firm justly believes that no aeronautical manufacturer can afford not to carry on development work as well as the manufacture of production types.

It is interesting to see from the plant account that the Wright Corp. has a very large sum invested in machinery and special equipment. No land nor buildings are included in this account, as these facilities are leased by the corporation for a long period. The equipment, however, provides for the complete manufacture of almost all parts of the engine, the only exceptions being certain raw materials and commercial articles. This advisable requirement means a heavy investment in proportion to the amount of business done, and in this respect the development and manufacture of aeronautical engines differs widely from that of airplanes. The latter, except when they are built in very large quantities, do not necessitate any great amount of special equipment or facilities, whereas, to build even 300 really good aircraft engines per year, a completely equipped plant, with much machinery and facilities, is required.

The successful operations of the Wright Aeronautical Corp. are largely due to the fact that they had the courage several years ago, at the close of the late war, to invest a very considerable amount of money in facilities for manufacturing engines, without much assurance of the stability of the demand. They are due, furthermore, to the fact that they had the courage of their convictions to devote all their time and all their energy to the aeronautical business, and have not treated it as just an interesting diversion from some other regular line of endeavor. Their success should be of considerable benefit to aviation in general, in that it will tend to make new capital feel that aeronautical enterprises offer a safe investment, if the problem is properly visualized in the first place, and then efficiently handled.

Air Service Plans Flying Aircraft Carriers

Plans Provide for the Experimental Use of Airships For Carrying, Launching and Picking Up Airplanes

The Air Service is developing plans for aerial aircraft carriers, it is learned in Washington. Means and methods for launching and taking on board small airplanes, carrying gas, ammunition and bombs for distribution to its fleet of planes, are being studied in connection with the employment of large airships by officers of the Army Air Service.

"What the Air Service needs today", said one officer, "are lighter-than-air transports for carrying personnel, equipment, spares, gas, and oil, with facilities for picking up and dropping planes, so that the pilots and observers can be relieved in the air, the planes gassed, and ammunition and bombs supplied, without necessitating a return to a land or ship base. Just as the aircraft of the Navy are cared for by a mother ship or airplane carrier, so must the Army craft be supplied from an aerial mother ship," he continued.

Originally Planned with Roma

"We were making just such plans for experimenting with the Roma, but with the delay of getting her into shape and the installation of six new Liberty engines, we had not yet undertaken experiments when she was destroyed. Now we are without a ship with which to conduct out tests and trials, which are based upon sound reasoning and are still believed practical," he said.

The bombing tests off the Virginia Capes last summer, it was pointed out, revealed the fact that airplanes could keep a sea fleet at bay when met at the coast line, or 200 miles out at sea, but it was explained, the planes had to return to their base for a new gasoline supply and for additional bombs, which required considerable time and consumed a lot of fuel. With an aerial supply cruiser such as has been outlined, there would be no limit to the distance off the coast to which land planes could operate without returning to land, remaining at sea continually. Even small pursuit planes could be so used, it is said, enabling a defensive air force to meet the combat planes of an enemy fleet well at sea, while their mother airship remained aloof and secure from attack at a given location not too distant from the scene of action.

Another use of the aerial transports would be for quick concentrations of air forces at a particular spot lacking in supplies and fuel. The planes could probably reach the spot independently and the mother airship would soon be on hand with the spares, gas and ammunition, enough for a long engagement. Nothing would prevent the ships of the air from taking the war into the enemy country with such a portable supply base, it was explained.

Secretary Week's Views

The possible use of airships for this purpose was mentioned for the first time by Secretary Weeks in commenting on the replacement of the Roma. He only mentioned, however, the value of taking airplanes to a distant zone of action, without passing over territory of another power en route.

An aerial aircraft carrier, might also be of considerable value in times of peace, it was pointed out, when it became necessary for example to send a number of short distance aircraft to the Canal Zone. A ship like the Roma could have carried several planes suspended from her rigid keel, sailed either down the coast or by a sea route to the Canal, thus avoiding a flight over the confines of another country where national or international aerial laws might prohibit the flight of foreign military aircraft. Airplanes with short cruising radius could not accomplish such a trip without breaking any such existing laws.

Although no experiments had yet been conducted in connection with the development of large lighter-than-air carriers, the plans of the Army Air Service contemplated experiments with the Roma in dropping and picking up small pursuit planes while in flight. Just as soon as the Roma had made a long trip or two it was planned to take up a small plane suspended by a cable carrying a large hook which was to have been passed through a large and strong ring fixed in the upper wing of the plane before leaving the ground. By means of a reel the plane was to have been hauled up against the rigid keel of the airship and held steady by small auxiliary braces, so that it would point directly ahead, parallel to the course followed and not whip about when the mother craft was under way.

The release of the plane when the carrier was under way was believed a simple problem. The pilot would get into his cockpit from the keel of the airship, start his engine and take the controls of his craft, then the plane would have been lowered slowly by a winch or reel, the pilot keeping the nose of his plane in the wind stream as he sped up his engines. When a safe distance below the big airship, the pull of his propeller keeping his suspension cable nearly vertical, he would signal to the handlers to let go. The catch on the hook would have been released, permitting him to fly off the hook, as it were,which would have been pointing ahead. Officers say that there might have been a slight drop as the plane took off, but if the pilot speeded up his engine gradually in excess of the airship's speed, his momentum and air speed would undoubtedly have taken him off the hook without any difficulty.

Picking up a Plane in the Air

Picking up a plane in the air would have been a little more difficult it was expected, but if the airship lowered her hook pointing it aft, it was believed that with care a pilot could have flown his plane directly onto the hook. He would have had to fly steadily at a trifle over the airship's speed, directly parallel to her course and exactly beneath her center, so that he could engage the large ring on his upper plane with the open hook on the trailing cable. Once caught on the hook which would have been closed immediately, he would have slowed his engine down as the cable was hauled up, and finally his plane would have been secured and braced against the keel of the mother ship, whereupon the pilot would have stopped his engine and climbed aboard.

With airplanes carried below big airships in this fashion it would be an easy matter to refuel them, supply bombs and machine gun ammunition and change pilots, enabling a weary air man to secure some rest without keeping the plane out of action, Air Service officers say.

Much remains to be carried out before the plan can be tried officially, but Army officers are most enthusiastic about its possibilities although today the Army is without an airship capable of carrying out the experiments, officers believe that a replacement ship will be secured for this purpose.

Loening Air Yacht for Astor

Vincent Astor has placed with the Loening Engineering Corp. an order for a specially appointed Loening Air Yacht of the type 23, which is now performing so successfully on the Florida coasts. The machine is to be delivered in June.

Mr. Astor placed his order after several flights between Palm Beach and Miami with David H. McCulloch. Ross K. Judson, Vice President of the Continental Motor Corp., Detroit, has also ordered a Loening monoplane air yacht, to be equipped with a 400 hp. Curtiss engine, and the Wright Aeronautical Corp., Paterson, N. J., has ordered one for the use of its officers, this craft to be equipped with a 300 hp. Wright engine.

The Sperry Flight Indicator

An Instrument Built for Flying in Fog and in Clouds Which Combines the Features of Turn Indicator and Inclinometer

When pilots began flying in fogs and thick clouds they found that, because they no longer had the ground to check by, it was impossible to fly in a straight line by compass alone. The reason for this is that any compass will swing a little, and if the pilot keeps the plane dead on the compass which is swinging he will be unconsciously turning his plane to follow the swing of the compass, which will increase under this action until it finally goes round in a circle.

It was also found difficult to maintain an even lateral balance without the ground in sight, and the consequent skids and slips served in increase the difficulties of flying straight, beside the dangers of a crash close to the ground.

Difficulty of Flying in Clouds

To quote from paper read before the Royal Aeronautical Society, "The essence of the difficulty of flying in clouds lies in the fact that it is impossible to distinguish between the effects of gravity and of acceleration. For instance, a man in a lift that is accelerating downward imagines that his weight has become reduced, and but for the fact that his other senses, such as sight and hearing, may tell him he is in a lift and therefore probably descending or ascending, he has no way of telling that his weight has not been reduced by the earth getting tired of pulling at him. In other words, an acceleration, or rate of generation of motion, cannot be distinguished from a change of weight.

"Now consider a man in an airplane that is turning in a curve most of you know that under these conditions his acceleration, or rate of change of motion, will be at right angles to his momentary direction of motion.

"Let us suppose, however, that the cloud is a large one; his first indication that something is wrong is, as a rule, either an increase or decrease of speed that is not counteracted by the accustomed movements of the controls. A period of wild suspense and utter bewilderment now follows during which the pilot makes violent efforts to recover control, but without success. The next thing that he realizes, if he realizes anything at all, is that he is either on his back or spinning and the earth standing up at a ridiculous angle and spinning round like a drunken dinner plate. Happy is he that has plenty of air room under these circumstances."

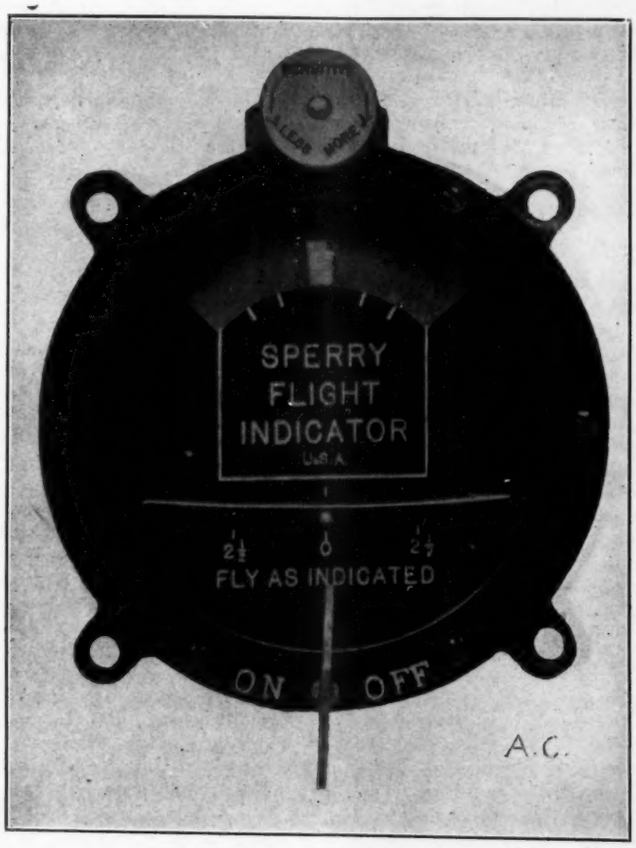
To overcome these difficulties, there arose the demand for an instrument which would show a pilot an absolutely straight course until his compass settled, when he could choose his direction safely; and in addition an instrument that would tell him instantly when his ship was not level laterally.

The Sperry Flight Indicator, which was designed to answer these requirements, combines in a single instrument the features of the Sperry Turn Indicator with those of an inclinometer.

The Sperry Turn Indicator equipped the Navy-Curtiss flying boats on their famous transatlantic flight, and the services this instrument rendered may be judged from a letter by Comdr. H. C. Richardson, U.S.N., in which he wrote in part:

"During the night of the flight from Newfoundland to the Azores there were many times before the moon rose when we were flying through darkness, and sometimes through fog when no horizon was available, and complete dependence had to be placed on the turn indicator. By its use we were enabled to keep from turning, which made the inclinometer effective, thus being able to avoid inclination. In avoiding inclinations and turning the magnetic compass gave us a true indication of our course. Further, when slight changes of course were required, the turn indicator apprised us of the turn in the proper direction before the compass could have done so, and when we felt we were approximately headed in the new direction the turn indicator enabled us to steady down on the course and in a few seconds to get a correct reading from the compass.

"The same conditions obtained when we ran into fog and squalls in the vicinity of the Azores."



Dial of the Sperry Flight Indicator

Principles on Which the Instrument Operates

The mechanism of the Sperry Flight Indicator is extremely simple. A small gyro on a lateral axis, is spun to about 8000 r.p.m. by the suction obtained from a venturi tube placed in the air stream of the propeller, and connected to the instrument by a length of tubing. The frame holding the gyro bearings is hung on a fore and aft axis, but its rotation about this axis is restrained by a light centralizing spring which is adjustable from the face of the instrument.

The action of the instrument depends upon the well known laws of gyroscopic precession—that is, any rotary motion transmitted to a gyro (except motion about its own axis) causes the gyro to move, not in the direction of the applied motion, but at right angles to it. This motion at right angles to the applied motion is called "precession." Furthermore, the speed at which a gyro will "precess" is many times greater than the speed at which the rotary motion is applied to it.

The operation of the indicator is thus very simple. When the airplane starts to turn (about a vertical axis) the rotary motion causes the gyro to precess (about a horizontal axis) and this precession, many times greater than the turning motion of the airplane, is indicated on the dial of the instrument. Were it not for the centralizing spring, the slightest turning motion of the airplane would cause the gyro to precess all the

way round. The spring is used, therefore, to restrain the action and so that fast or slow turns produce large or small indications. As soon as the turning motion ceases, the springs return the gyro to the neutral position.

The Sperry Flight Indicator, complete with venturi tube for operation, weighs but 1¾ lb. The power required to operate the instrument is very little more than that needed for an airspeed indicator.

Installation Instructions

Locate Flight Indicator on instrument board so that the pilot may have a clear and unobstructed view of same, and sufficiently near to the pilot to enable him to reach shut-off valve without changing his position. It will also be an advantage to him to place it perpendicularly in line with the compass if possible.

A hole should be cut in instrument board, 3¼ in. diameter to admit case of Flight Indicator up to bezel. This hole should be notched at top and bottom to clear sensitive adjustment control and shut-off valve rod. In making the above notches or cut-outs, clearance should be allowed in order to adjust position or rotate instrument in order to level same up with plane.

In mounting this instrument upon instrument board, use either wood screw or bolts, both of which are furnished with each instrument. It is preferable to use bolts where instrument board is of thin veneer.

For tractor type of airplane the venturi tube should be mounted on side of fuselage, center section strut, or other position which is directly in the slip stream of the propeller. For pusher type of plane the venturi should be mounted on horizontal stabilizer, or other position in the slip stream of propeller. For multiple motor plane mount in the slip stream nearest the pilot seat, if tractor, and on the stabilizer in line with the slip stream, if pusher. The venturi is secured in position with wood screws furnished with each instrument. End of venturi marked Front should face the slip stream of propeller.

Aluminum tube furnished for main line connection between Flight Indicator and venturi should be cut and bent to suit. In bending, avoid all sharp corners. Rubber tube is furnished for making the connections between the aluminum tube and indicator outlet connection and venturi intake connection. The rubber tube should be cut in small lengths of about 3 in.—lapping well the break in line. Each end of line should be coated with Special Adhesive, furnished, before rubber tube connections are slid on. Wire securely each side of rubber connection with copper wire furnished.

With each Flight Indicator six tube clips are furnished which can be bent over tube for securing it to machine at different points.

Use by the Pilot

In order to hold a straight course with rudder bar—keep the white pillar directly above the miniature radiator cap on the dial of the instrument, similar to keeping a reference point on land lined up with the radiator cap or some other fixed point ahead of the pilot of the airplane. When pillar moves to the right, it is an indication that the airplane is turning to the left, consequently, correct with right rudder and vice-versa. Also, by means of ailerons keep the ball in the glass reading "zero." The ball rolls to the wing that should be raised, consequently move stick opposite from ball, and by means of the elevator, keep your airspeed constant. In this way steady flight will ensue, and the compass will settle, allowing the pilot to get a correct indication of his direction.

To get the best results with the direction indication, it is advisable to have the instrument adjusted as far as sensitiveness is concerned, to the particular ship on which it is being used. It is, therefore, suggested to set the sensitive adjustment consisting of a knurled screw located at the upper part of the dial to the extreme in the direction marked "more sensitive"—then, taking the machine in the air, turn in the opposite direction or the direction marked "less sensitive" until the pillar steadies down so that the pilot can fly with the greatest of facility. The degree of turn is indicated by the distance that the white pillar moves away from the radiator cap. A sharp turn will be indicated by a wide movement. To maintain a smooth turn by the instrument, keep the white pillar at a constant degree right or left from miniature radiator cap as marked on the dial at the same time keeping the ball at "zero" thereby showing the proper bank and the airspeed as before.

When flying in fog, it is to be remembered that if the pilot will concentrate on his direction, that the maintenance of good direction will automatically improve his lateral stability and further, the maintenance of good lateral stability and direction—will in turn improve his longitudinal stability with the consequence that if he will concentrate on his direction it will not be necessary for him to correct his lateral and longitudinal stability but occasionally.

It is suggested that the pilot practice flying with a flight indicator by putting his head underneath the cowling of his airplane. In this way he can practice flying with his instrument on a trip in clear weather, so that when he gets in fog, it will be easy for him to fly by means of the instrument. A shut-off lever is provided which permits the pilot to shut off the gyroscope to save wear and tear when it is not necessary to use it. The instrument will start up very rapidly when turned on.

Government and Industry Cooperate in Standardization

At the request of the Hon. Herbert C. Hoover, Secretary of Commerce, the American Engineering Standards Committee has designated A. A. Stevenson, the retiring Chairman of the Committee, as a special representative to work with the Department in the cooperation between the Department's Division of Simplified Practice and the American Engineering Standards Committee.

The Division of Simplified Practice is a coordinating unit of the Department of Commerce assisting in those reductions of excessive variety and other simplifications which many industries are undertaking in order to decrease the cost of production and distribution of manufactured articles. The work of the Division was organized in the latter part of 1921 and is now actively under way.

The American Engineering Standards Committee, which serves as a national clearing house for a broad field of engineering and industrial standardization has been actively at work somewhat over two years, during which time it has brought about a large measure of industry-wide cooperation. In this work more than a hundred national organizations are participating through representatives officially designated by them. Eighteen standards have received formal approval as nationally recognized standards, and work on more than sixty other projects is in various stages of development. The American Engineering Standards Committee is maintained jointly by twenty-nine national organizations, including five Departments of the Federal Government, nine national engineering societies, and fifteen national industrial associations.

New Night Landing Device

The biggest electric sign in the world is now operating at the Croydon air station, London. It is shaped like a star and has been constructed to assist belated pilots coming in to land on the airdrome during the winter months. The giant sign, measuring more than a quarter of a mile from point to point, is let into the ground, and over the whole of it has been fixed thick glass, so that the surface is on an exact level with the surrounding ground, and an incoming air express can land with safety on and, if necessary, taxi across the surface of the guiding star. It is illuminated with several thousand electric bulbs. An ingenious arrangement of the switching apparatus enables the direction of the wind to be indicated to night travelers on the airway. Every night during the winter a letter L of huge dimensions will be flashed to the skies, the position of same to be determined by the direction of the wind. The long leg of the L will show the airman in which direction the wind is blowing.

Trials of Goodyear Type AC Airship

Nonrigid Airship of Novel Type, built for Air Service, Makes Successful Trials at Goodyear-Akron Air Station

The new Goodyear Type AC military airship, which was described in the Jan. 23, 1922 issue of AVIATION, has recently been subjected to a series of trials at Akron, Ohio, preparatory to its acceptance by the Army Air Service for which it was built.

Specifications

The general specifications of this ship are as follows:—

Volume	185,000 cu. ft.
Length	170 ft.
Diameter	48 ft.
Speed	65 m.p.h.
Ceiling	12,000 ft.
Radius of action, full speed	20 hr.
Radius of action, cruising speed	30 to 40 hr.

Trials Highly Satisfactory

The trials have given very satisfactory results, and indicated that several features of the ship, which were of an experimental nature, will prove satisfactory and mark considerable progress in airship design.

A departure from the ideal streamline shape has resulted in a contour which can be best described as "squat," but the first tests have shown that this shape has remarkable efficiency, the air performance being excellent. In addition, this type permits a concentration of lift and has enabled the designers to save considerable material in its construction and considerable weight in car suspensions.

The car is of the enclosed type and is flush with the bottom of the bag, which improves the streamline result of the entire ship. It is divided into two compartments, the forward compartment containing the navigation and observation chamber and the rear compartment the power plant.

The Power Plant

The power plant consists of two Aeromarine 130 hp. type U6D engines, both of which are in the car, thereby effecting a considerable saving in space. These engines are connected by transmission and shafts to two propellers which extend out from the side of the car. (See AVIATION, Jan. 23, 1922.). This feature has always given considerable trouble in design heretofore, but the difficulty seems to have been solved in this case. The designers have been enabled to use large propellers which will develop a maximum efficiency at a lower number of revolutions than the maximum efficiency in r.p.m. of the engines. In the initial test of the engines, both were opened wide and both tachometers indicated 1550 r.p.m., giving a propeller speed of 775 r.p.m. This being a static test, the propellers would go up to their designed speed of 800 r.p.m. while in flight. A reverse gear is inserted in the transmission which permits the propellers to be reversed in the air without difficulty. It is also possible to use both engines to drive one propeller or one engine to drive both propellers.

A great deal of care has been taken to develop a compact instrument board, and the military airship has the most satisfactory arrangement that has yet been found. The control board carries every instrument that is required for successful lighter-than-air navigation, and is set in the car in such manner as to permit all instruments to have the highest degree of accessibility. The pilot controls the entire transmission, clutches, reverse device, etc., from the navigating cabin.

Ballast and Fuel

Water ballast is carried in the floor of the car immediately below the navigating cabin, wherein a dial is located to indicate the amount of water available for ballast. The fuel tanks are located in the rear part of the navigating cabin, there being two 160-gal. tanks, so constructed as to permit them to be used as sleeping cots in case of long flights.

The military airship has only one ballonet, whereas A, C and D types of ships have two. The single ballonet results in a saving in material and cost of manufacture, as well is simplicity of operation.

Report on Test Flights

Following is a report on the trial flights of the Goodyear Type AC military airship at the Goodyear-Akron air station, made by J. T. Kraft, chief aeronautical engineer of the Goodyear Tire & Rubber Co.:

"The first flight was in charge of Captain McEntire, with Major Westover, Major Van Nostrand, Major Strauss, Lieutenant Cluck, of the Air Service, H. T. Kraft, chief aeronautical engineer of The Goodyear Tire & Rubber Co., C. E. Brannigan, Goodyear Tire & Rubber Co., test pilot, and A. C. O'Neil, mechanician aboard. The ship was filled up, having a capacity of 360 gal. of gasoline, 650 lb. of water ballast, and 490 lb. of sand. The eight men on board were provided with parachutes each weighing approximately 26 lb. The temperature at the time of the flight was 45 deg. Fahr., which shows quite a remarkable lift for a ship incorporating the enclosed car feature.

"Preliminary speed trials showed 63 m.p.h. We believe when this ship is properly adjusted, better than 65 m.p.h. will be possible. The ship has a gear-drive arrangement, thus permitting both propellers to be operated by one or both motors, either in a forward or reverse direction. This feature was tried out on the second flight, and worked very successfully. As the car is divided into two sections, by a soundproof bulkhead, the extreme quietness in the control cabin permitted of ordinary conversation, there being an absolute lack of gear noises and vibrations in the control cabin.

"There has been some opinions advanced with reference to the danger from fires on ships that carry the car against the bottom of the envelope. 'Circumstances alter cases,' and in the U. S. military airship the fire hazard was given every consideration. In the first place, the engine room is lined with sheet asbestos, giving at least some opportunity to use fire extinguishers, which are readily available, in the event of gasoline catching fire during flight. The fuel tanks are located in the control cabin, and all check valves, fuel lines, and miscellaneous fittings are beneath the floor out of the engine room. There is a duct 32 ft. long and 20 in. wide the full length of the car below the floor line. This duct is so ventilated as to get a constant flow of fresh air at all times.

"The exhaust pipes are so arranged that cool air is forced around them from air conducted from the blowers which are bolted directly to the engine fly wheels. It was possible to lay one's hand on the exhaust pipe jacket at any time during flight.

"Between the envelope and the car proper there is an air space of 14 in. clearance, this being faired into the envelope proper by elastic fabric, with openings at the forward part of the ship to insure constant circulation between the envelope and the roof of the car, thereby eliminating any possibility of hydrogen gas getting into the control or engine room proper. It should also be noted that the top of the car is made gas tight, further to guard against this danger.

"Apart from these advantages, the single ballonet, which constitutes 30 per cent of the ship's volume is directly above the car, thereby securing another layer of air between the bottom of the envelope and the hydrogen gas. We have also proven on two occasions that this is advantageous in case of propeller breakage, as the ballonet is directly above the propellers, insuring against pieces of flying propeller getting into the gas compartment. However, due to the slow speed of

these propellers, which is 800 r.p.m., radial stresses have been so reduced as to practically eliminate this danger.

"While a new ship of such radical changes in design is sure to require some degree of correction in subsequent units, we have at least proven without any doubt, that ships of short aspect ratio maintain a truer form, as well as having as little or less, head resistance as ships of the previous types."

Present intentions are to fly this ship to Dayton, Ohio, for general inspection of lighter-than-air engineers at McCook Field, from where it will return to Akron for the purpose of preparing it for a flight to either Aberdeen or Langley Field.

Notices to Aviators

Issued by Hydrographic Office, U. S. Navy

Aircraft distress signals.—Mariners and others are notified that when any aircraft is in distress and requires assistance, the following shall be the signals displayed by her, either together or separately:

I. The International Signal " S O S" by means of visual or wireless telegraphy.

II. The International Code Signal of Distress indicated by N C.

III. The Distant Signal, consisting of a square flag having above or below it a ball or anything resembling a ball.

IV. A continuous sounding with any sound apparatus.

V. A signal consisting of a succession of *white* Very's lights fired at short intervals.

VI. A *white* flare from which at intervals of about 3 seconds a *white* light is ejected into the air.

Note.—The above signals are subject to such modification as shall be published from time to time.

—(*N.A. 2, 1922.*)

New York

Greenport, Long Island, in depths 2 to 6 fathoms, hard bottom, with good beaching facilities; rise and fall of tide 2.4 ft.

Supplies and repair shops can be had at Greenport.

Landmarks:—Pier and two large gasoline tanks; best beach to left of tanks and pier

NOTE.—Greenport is an important town and the terminus of a branch of the Long Island Railroad. There are well-equipped shipyards and machine shops. Depth at the wharves ranges from 7 to 19 ft.

Oyster Bay, Long Island, in depths of 7 to 45 ft. mud bottom, with good beaching facilities; rise and fall of tide 7.3 ft.

Supplies and repair shops at Oyster Bay.

Landmark:—Village and Eaton Neck Lighthouse.

NOTE.—Oyster Bay is a village with railroad communication on the southern shore of Oyster Bay Harbor. All kinds of stores can be had.

NOTE.—Rockaway to Oyster Bay 27 miles 41°.

—(*N.A. 10, 1921.*)

Virginia

Potomac River—Alexandria—. Obstruction reported.—The commander, Scouting Group, Air Squadrons U. S. Atlantic Fleet, reports that on Feb. 14, 1922, F5 seaplane *A-3790* struck a snag and sustained serious damage, about a hundred yards from the Virginia shore, off the Bryant Fertilizer Factory, at the upstream limit of Alexandria. Inquiry revealed the fact that the snag was probably a submerged pile of an old dock.

Seaplanes and other small boats should avoid the vicinity. Approximate position: 38° 48′ 45″ N., 77° 02′ 10″ W.

—(*N.A. 3, 1922.*)

French Bascule Hangar Door

The Société de Constructions de Levallois-Perret has designed a bascule hangar door which was entered in competition last year by the Service des Fabrications de l'Aéronautique, for the construction of four airplane hangars at the Villacoublay airdrome, near Paris. These hangars measure 35 m. (116 ft.) in breadth, 30 m. (110 ft.) in depth and 8.5 m. (28 ft.) in height.

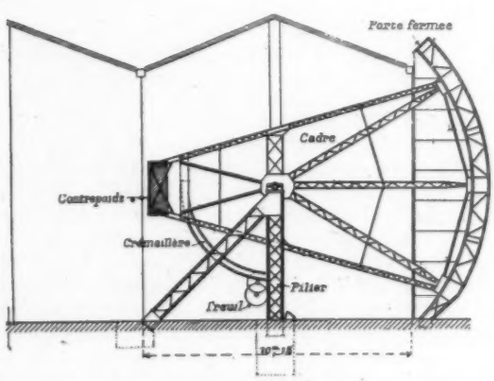


Fig. 1

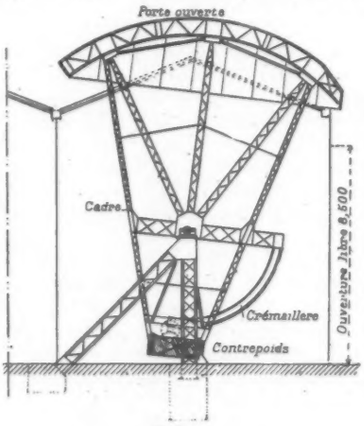


Fig. 2

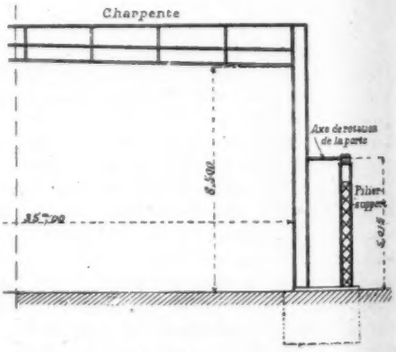


Fig. 3

The doors were required to be operated by hand and capable of being completely opened or closed within 5 min. Each one is in the form of a segment of a circle, (Figs. 1 and 2) and is of sheet steel 1 mm. in thickness. They are stiffened at the edges by angles taking the form of the plate, and by five I beams running in a longitudinal direction, for the purpose of giving this large surface resistance to wind pressure. A system of cross-bracing in every direction by means of small angles gives the whole structure considerable rigidity.

Outside of the walls of the hangar are arranged two frames composed of three lattice struts forming radii of the circular segment and having their center at the trunnion. To these are attached the ends of the I beams, by means of a framework at their outer ends, and also two other lattice struts for the support of the counterweight. A transverse member carries the rack; the whole being operated by a hand windlass at each side. The rigidity of construction assures the simultaneous operation of the two windlasses.

The counterweight is of cast iron blocks, these being of such size as to allow the placing of a certain quantity of wood within the counterweight box so that the position of the center of gravity of the whole system may be delicately adjusted.

These doors are relatively light; the wall of sheet metal weighs 4½ tons, and the I beams and cross bracing about 7½ tons, making a total of 12 tons for a surface of 297.5 sq. m. (3200 sq. ft.), which is 40 kg. per sq. m. or about 8 lb. qer sq. ft. The total weight on the trunnions is 40 tons, of which 22 tons is counterweight. The accompanying figures, from Le Génie Civil, illustrate this construction.

Wright Aeronautical Corp. Shows Profits

Second Report to Stockholders of Paterson Firm Shows Substantial Increase in Earnings

The second report to stockholders of the Wright Aeronautical Corp. of Paterson, N. J., has just been made public. The report, which covers operations for the year ended Dec. 31, 1921, shows a substantial increase in the earnings of the firm. The income account for the year shows a balance carried to surplus of $597,554 after Federal taxes. Income from investments amounted to $205,076, the remainder of income being from operations. This shows earnings for the year equivalent to $2.66 a share, as against $1.87 a share for the previous year.

The Report

The report, dated March 15, 1922, says in part:

"Your Corporation produced and shipped during the year 1921 $2,426,186.68 worth of aeronautical engines and parts. Almost all this business was obtained from the War and Navy Departments of the United States. A considerable part consisted of the experimental development of new types of engines for both airplanes and dirigibles, for the use of Air Service. Some of these experimental types are engines not heretofore developed either in this country or abroad. On Jan. 1, 1922, your Corporation had $2,069,917.30 worth of orders on its books. Since then it has received orders for additional business amounting to $259,468. 96. The principal item of present business is a contract with the United States Army Air Service for the purchase of 300 Wright H3 engines. This type of engine has now been accepted as the standard pursuit type engine for Air Service, and this is the first large production order for aeronautical engines placed by either the Army or the Navy since the close of the late war. Moreover, this engine is the first pursuit type engine which has been developed in this country and compares favorably with the best results obtained abroad, either during or since the conclusion of the war. All contracts entered into to date have been successfully performed, and the reputation of your Corporation has increased, because of its ability to manufacture a quality product and successfully meet the most exacting performance and delivery requirements.

"On April 22, 1921, George H. Houston retired as President of your Corporation, but he has continued to act as a Director. He was succeeded as President by F. B. Rentschler, who had previously acted as Vice President and General Manager.

"The financial position of your Corporation is strong. Accounts and Notes Receivable, amounting to $180,234.47, are mostly due from the United States Government and are current. The certified accountants considered it unnecessary to provide any reserve, owing to their satisfactory condition. Inventories, which are shown at $616,518.80, are priced at cost, which is substantially the market, and are practically all applicable to the completion of existing contracts.

"Machinery, equipment, etc., less reserve for depreciation, amount to $493,583.31, indicating that there has been practically no net increase in plant account during the year, and it is not expected that this account need be increased to perform the present contracts.

"The liquid condition of your Corporation is shown by a comparison of Current Assets with Current Liabilities, which are in the approximate ratio of 6 to 1.

"Income Account for the twelve months ended Dec. 31, 1921, indicates a balance carried to surplus of $597,554.90 after federal taxes. Income from investments amounted to $205,076.65, the remainder of income being from operations. This shows earnings for the year equivalent to $2.66 per share, as against $1.87 per share for the previous year. As indicated by the Balance Sheet, practically the entire net earnings of your Corporation for the year have gone into current assets.

"On Aug. 31 last your Corporation paid an initial dividend of twenty-five cents per share, and since that date two additional quarterly dividend at the same rate have been paid, making a total dividend disbursement of $168,292.50."

Income Account for the Calender Year, 1921

Net Sales	$2,426,186.68
Deduct:	
Manufacturing and general expenses, including depreciation of machinery, etc	1,967,698.94
Net income from operations	$ 458,487.74
Ratio to net sales 18.90	
Add:	
Income from investments, interest, etc.	205,076.65
	$ 663,564.39
Deduct:	
Provision for federal taxes	66,009.49
Balance carried to surplus	$ 597,554.90

WRIGHT AERONAUTICAL CORPORATION
WRIGHT-MARTIN AIRCRAFT CORPORATION (in dissolution)
and
WRIGHT FLYING COMPANY
CONSOLIDATED BALANCE SHEET
as at December 31, 1921

ASSETS

Cash in bank and on hand		$ 755,153.92
Accounts and notes receivable		180,234.47
Marketable securities, at cost (market value $278,286.50)		269,600.00
Inventories, at cost		616,518.80
Interest receivable		14,055.87
Insurance deposits		6,606.41
		$1,842,169.47
Accounts vouchered to Air Service, U. S. Army, for expenditures incurred and profits accrued under "cost-plus" contracts	$1,099,189.74	
Claims against U. S. Government and equity in Aluminum Company of America claim	50,240.10	1,149,429.84
		$2,991,599.31
Investments:		
Mercer Motor Co. collateral notes, etc		66,201.00
Machinery, equipment, etc., less reserve for depreciation		493,538.31
Airplane patents, net of amortization		110,368.76
Deferred expense, cost of purchase of Artcraft Cabinet Company's option to renew lease, etc		19,390.98
Trust Fund, investments and deposits		2,783,654.88
		$6,464,753.24

LIABILITIES

Accounts payable, accrued salaries, wages, bonuses, etc	$ 124,404.84
Accrued royalties	80,672.15
Accrued managerial participating compensation, including balance of 1919	45,300.00
Federal taxes withheld at source	6,296.22
Reserve for 1921 federal income taxes	66,009.49
	$ 322,682.70
Reserve for guarantee on Simplex cars	35,829.37
Book value of undistributed net assets of Wright-Martin Aircraft Corporation (in dissolution) to be paid to Wright Aeronautical Corporation as and when realized	556,026.61
Reserve for Trust Fund to care for actual or contingent liabilities of Wright-Martin Aircraft Corporation	2,783,654.88
	$3,698,193.56

CAPITAL STOCK AND SURPLUS

Common stock, Wright Aeronautical Corporation, outstanding, 224,390 shares, no par value	$1,913,168.22
Surplus earned	853,391.46
	$2,766,559.68
	$6,464,753.24

Regulations of the Jacques Schneider Cup

Famous Cup, Twice Won by Aero Club of Italy, Will Be Competed For the Last Week of August at Naples

The Jacques Schneider Cup, the international speed classic of marine aviation, will this year be competed for in Naples, Italy, during the last fortnight of August. The Cup has been won twice in succession by Italian entrants—in 1920 by Lieut. Comdr. Bologna on a Savoia, and in 1921 by De Briganti on a Macchi—and if Italian entrants again win it this year the Cup will be permantly awarded the Aero Club of Italy.

As this year's contest may therefore be the last one to be held, particular interest attaches to the regulations governing this Cup. These are published below in the translation prepared by the contest committee, Aero Club of America.—EDITOR.

Origin and General Conditions

Art. 1.—M. Jacques Schneider places in the hands of the Aero Club of France, under the conditions herinafter set forth:

1. An objet d'art, (trophy), valued at 25,000 francs, to be transmitted to the International Aeronautical Federation, (F. A. I.) the latter to endow therewith an inter-club aviation challenge contest, called the "Jacques Schneider Marine Aviation Cup Race," which is to be

Open to aviation apparatus of every kind:

Contested for on the basis of an international challenge pursuant to the Regulations approved by the F. A. I.

Offered for the first time through the Aero Club of France, which is to accept the first challenge.

2. The engagement to pay the sum of 25,000 francs, before each of the first three offers of the Cup, to that Club holding membership in the F. A. I. that is in charge of the contest. This amount must be delivered in cash to the competing aviator whose performance shall have kept it in the possession thereof.

Character of the Contest

Art. 2. 1. Contest shall be one of speed; the course determined in advance, shall be traced either in a straight or broken line or in a closed circuit.

The length of the course shall not be less than 150 nautical miles.*

2. Each year, prior to the 31st of January, the Board of the F. A. I., taking note of the progress attained in the art of Aviation, shall draw up the Regulations covering the annual contest; the Club charged with organizing this contest must conform to the program thus worked out.

If no competitor makes the race over the course, the Cup shall not be awarded, and shall remain at the main office of the Club holding it; the latter must organize the contest anew the following year, but the holding Club that shall under these circumstances be enabled to retain the trophy shall not be deemed to have again won the challenge race.

In the event that this occurs at the time of the first offers of the Cup, same shall remain in the safe-keeping of the Aero Club of France, which must organize the contest anew the year following.

ART. 3.—The race shall be open to aviation apparatus of all kinds (Class C).

Qualifications of Contestants

ART. 4.—Any Club holding membership in the F. A. I. is qualified to take up the challenge of the Club holding the Cup.

Any Club entering for the race binds itself, in the event of its becoming the holder of the Cup, to provide for the organizing of the next contest.

ART. 5. Any qualified Club that desires to compete with the holder for the trophy must notify the latter of such decision before March 1, by registered letter addressed to the President, stating the number of competitors that are to enter the contest. This letter shall constitute an engagement, which must be accompanied by as many times 500 francs as there are competitors mentioned.

After the contest there shall be refunded as many times one-half this sum as there shall have been contestants starting, from the Club entered.

ART. 6.—Each Club may each year enter not over three contestants, and designate an equal number of substitutes.

ART. 7.—The regular entrants and their substitutes must be of the nationality of the Club, holding membership in the F. A. I., which enters them; or to a country not represented in the F.A.I. They must be designated by name by their Club not later than one week before the date of the contest.

Date and Place of Contest

ART. 8.—The Cup may be raced for every year, between April 1 and November 15. The date must be fixed before March 1 by the Club holding the Cup.

If no competitor shall have made the start within the time allowed, the Contest Officials shall decide whether it is advisable to annul the contest or allow new starts.

ART. 9.—The race must be run in the country holding the Cup. If, however, for preponderant reasons, recognized by the Board of the F.A.I., the holding Club should happen to find itself unable to fulfill its engagement as to the organization of the race, the Board shall request this service from the Club that previously held the trophy.

In the event of a refusal on the part of the latter Club, the Cup should be contended for in France.

ART. 10. The Club holding the Cup shall organize the contest and be responsible for applying the Regulations; but no matter in what country the race is run, one of the Contest Officials must be designated by the Aero Club in charge of such organization.

ART. 11. The expenses for organizing the contest shall be borne by the Club in charge of such organization.

ART. 12. In the event that the Cup race is run during the course of an aviation meet, a special day must be reserved for it.

Awarding the Cup

ART. 13. The governing body of the country organizing the race shall award the trophy.

ART. 14. The Club, recognized by the F.A.I., whose representative has won the Cup, shall be the new holder thereof.

ART. 15. The Club which shall have won the race three times in five years shall become the permanent possessor of the Cup.

The Cup shall become the permanent property of the Club holding it if it has not been challenged during five consecutive years.

ART. 16. The holding Club which shall have refrained from participation and yet shall not have been dispossessed of the Cup, though challenged, shall not be deemed to have again won the challenge race.

ART. 17. In the event of claim, complaint, appeal, etc., lodged with the International Conference, pursuant to the Regulations of the F.A.I., the Cup shall remain in the hands of the challenged Club until the settlement of the matter in dispute.

ART. 18. If the Club holding the Cup should pass out of existence, the Cup would be handed over to the Aero Club of France; in the absence of the latter, to the F.A.I. and in the absence of this in turn, to M. Jacques Schneider.

Prizes and Additional Awards

ART. 19. In addition to the three awards of 25,000 francs presented by M. Jacques Schneider (see ART. 1) and the

* The nautical mile equals 1853 meters.

other prizes that may be offered, the amount of the entry fees not refunded shall be divided up among the contestants in the following manner: a half to the second, a third to the third, and the remainder to the fourth, as long as three prizes of 25,000 francs provided for in ART. 1 shall not be awarded. When these three prizes have been awarded the competitor holding first place shall receive a half, the second a third, and the fourth the remainder of the entry fees. The same shall be true in all cases where the contest in question involves only three competitors that have finished the course.

If there are but two contestants, that have made the race, the first would receive two thirds and the second one third of the entry fees.

Lastly, in the event that only one contestant should take part, he would receive the total amount of the entry fees.

If the Cup is not awarded to any contestant, the entry fees shall be retained by the Club holding the trophy and they would then be added the following year to the entry fees charged for the new contest.

Observances of Regulations

ART. 20. Every Club that becomes the holder of the Cup formally engages to observe the present regulations.

General Conditions for 1922

Trials for Watertightness and Seaworthiness

ART. 1. Clubs entering aircraft must deposit, in addition to the entrance fee provided in the general Regulations, a bond to the amount of 5000 francs per apparatus, to guarantee presence at the trial.

This sum shall be returned in the case of every machine that has been presented at the trial.

ART. 2. *Trial for Watertightness.* The trials shall begin with test for watertightness carried out on the floats, this to precede the trial for seaworthiness.

For this trial, the apparatus must remain afloat for 6 hr., during which time the floats may not be emptied.

The apparatus must be in running order and ready to take the start with or without the crew.

ART. 3. *Trial for Seaworthiness.* This shall follow the trial for watertightness; for all contestants, it shall take place on the same day, or at most not later than within two days of the date of the Cup race, in the order fixed by lot.

The contest officials may grant authorization, to contestants that have not carried out the trial for seaworthiness, to recommence immediately their trial a second and last time.

ART. 4. Each apparatus, in proper working order, shall complete a course (located over the sea, gulf, cove, estuary or sheltered bay) over a circle measuring 5 to 10 marine miles, the exact measure traversed in this course shall be determined by the Contest Officials.

ART. 5. After having passed the starting line afloat, the apparatus shall take flight and continue the course in flight; during this course it must execute afloat two runs of ½ mile each the extreme limits of which shall be marked by two buoys; this run finished, it must rise into the air, terminate the circuit, come down again to the water in front of the starting line which it will pass afloat.

The Cup race shall be run by each apparatus in the condition in which it is presented for the trial for seaworthiness.

The apparatus shall not undergo any modification between the trial for seaworthiness and the end of the race itself; for this purpose it shall be stamped.

In the event of damage during this last trial, the apparatus may undergo the necessary repairs, but such repairs must be effected at sea and they must not be of such a character as to modify the original condition of the apparatus.

Speed Trial

In 1922 the Jacques Schneider Marine Aviation Cup Race will be run over a distance of 200 marine miles.

The contest shall take place between June 15 and Sept. 30.

The order to start shall be decided by lot.

The starts shall be given the contestants at a time and at intervals determined by the Officials.

This race shall take place on the sea, over a closed circuit with developed extent of at least 5 marine miles.

As the course, may, if necessary, be traced partly over the coast, the controls may be placed on shore, care being taken to avoid any arrangements that would embarrass the contestants.

Stops are allowed. The start and the finish must take place in full flight.

The race shall be closed at the time fixed by the Contest officials.

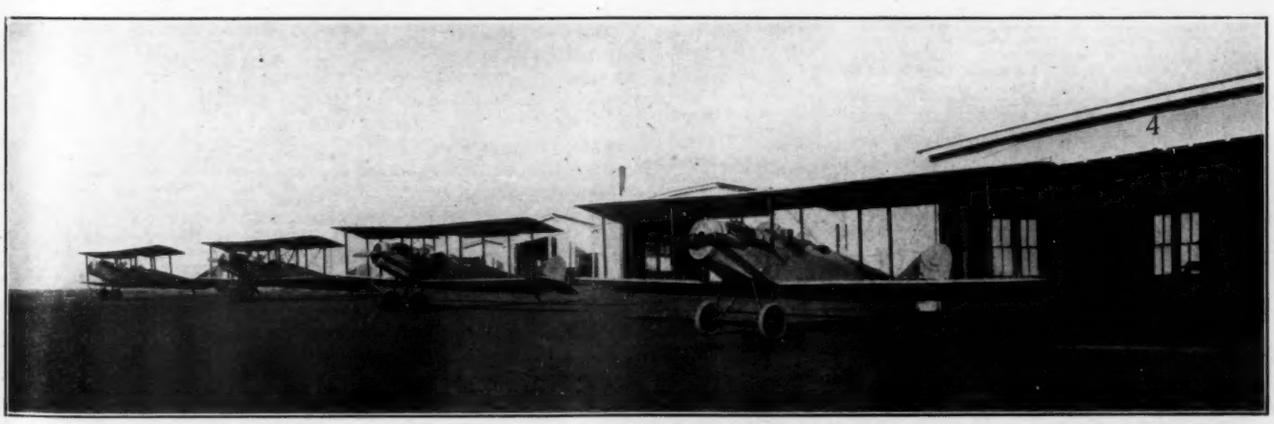
Performance of Maybach 300 Hp. Engine

N.A.C.A. Report No. 134

This report by S. W. Sparrow deals with the results of a test made upon a Maybach engine in the altitude chamber of the Bureau of Standards, where controlled conditions of temperature and pressure can be made to simulate those of the desired altitude.

The results of this test lead to the following conclusions: From the standpoint of thermal efficiency the full-load performance of the engine is excellent at densities corresponding to altitudes up to and including 15,000 feet. The brake mean effective pressure is rather low even at wide-open throttle. This tends to give a high weight per horsepower, inasmuch as the weight of many engine parts is governed by the size rather than the power of the engine. At part load the thermal efficiency of the engine is low. Judged on a basis of performance the engine's chief claim to interest would appear to lie in the carburetor design, which is largely responsible for the excellent full-load efficiency and for its poor part load efficiency.

A copy of Report No. 134 may be obtained upon request from the National Advisory Committee for Aeronautics.



A batch of new Laird "Swallows" lined up on the test field of the company, near Wichita, Kan., after having undergone inspection and test flights

"Who's Who in American Aeronautics"

(Copyright, 1921, by The Gardner, Moffat Co., Inc.)

The biographical sketches of men who are prominent in American Aeronautics are printed periodically in AVIATION. The first series will be shortly published in a more durable form, and revised issues will be published semi-annually to take care of the frequent changes in station of Army and Navy officers, and such other changes as may occur. As errors and omissions are liable to occur in a compilation of this character, interested parties are requested to notify "Who's Who" Editor of the necessary corrections so the record may be kept up to date.

Charles E. Merrill

MERRILL, CHARLES E., Banker; born, Green Cove Springs, Fla., Oct. 19, 1885; son of Charles E. Merrill and Octavia (Arlson) Merrill; married, Eliza Joyce Church, April 8, 1912.

Educated: Jacksonville, Fla., Public schools; Worcester Academy; Amherst College, 1904-1906; University of Michigan, 1906-1907.

Professional: Patchogue Plymouth Mills, 1907-1909; George H. Burr Co., 1909-1913; established present business, 1913.

Aeronautical Activities: U.S.S.M.A., Austin, Tex., Feb.-Mar. 1918; Kelly Field, Mar.-Aug. 1918; Carlstrom Field, Sept.-Oct. 1918; Dorr Field, Nov.-Dec. 1918.

Flying Rating: R.M.A., Aug. 28, 1918; Airplane Pilot, Dec. 14, 1918.

War Service: Commissioned 1st Lieut. 309 Inf. upon completion of 1st O.T.C., Aug. 15, 1917; transferred to Air Service, Feb. 15, 1918; discharged, Dec. 10, 1918.

Member: Montclair Golf Club; Essex County Country Club; Detroit Athletic Club; City Club, etc.

Present Occupation: Merrill, Lynch & Co.

Address: 120 Broadway, New York City; home, 186 Clinton Ave., Montclair, N. J.

Leslie Howard L'Hollier

L'HOLLIER, LESLIE HOWARD, Rubber Business; born, Birmingham, England, Dec. 27, 1889; son of Leon Edgar L'Hollier and Margaret Sanford L'Hollier; married, Miss Nana, Oct. 6, 1910.

Educated: Ratcliffe College, Leicester, England; The Oratory College, Birmingham, England.

Professional: Tobacco and cigar commission business, New York, 1907-1912, Chihuahua, 1912-1914, Boston, 1914-1916; tire business, 1920 to date.

Aeronautical Activities: Cadet, R.F.C., Nov. 1916; 2nd Lieut., R.F.C.; Flying Officer, R.A.F.; Handley-Page pilot in pioneer flight, England to Egypt; Handley-Page pilot in pioneer flight, Egypt to India; discharged, Jan. 3, 1920.

Flying Rating: Service Pilot.

Honors: Air Force Cross.

Member: Royal Aero Club; Akron Flying Club.

Present Occupation: Rubber Business.

Address: Goodyear Tire & Rubber Co., Akron, Ohio; home, 582 Talbot Ave., Akron, Ohio.

Roland George Mayer

MAYER, ROLAND GEORGE, Aeronautical Engineer; born, Seattle, Wash., April 20, 1892; son of Adam T. Mayer and Katherine B. Mayer; married, Mabel Lillian McClarren, Aug. 9, 1915.

Educated: Seattle grade schools; Broadway High School; B.S. in M.E. 1916, University of Washington.

Professional: General Machine work, 1908 to 1911; installation power plant work, 1911 and 1912; Foreman, machine shop, 1916-1917.

Aeronautical Activities: Experimental work on "Jannen" ornithopter, 1909, helicopter, 1910; Boeing Airplane Co. designer 1917; Bureau C.S. R. Navy Department, Washington, D. C., Aeronautical Engineer, 1917-1918; Naval Aircraft Factory, 1919 to date as Assistant Chief Engineer.

War Service: Lieut. (j.g.) C.C. U. S. Navy, 1918 to date.

Present Occupation: Aeronautical Engineer, Naval Aircraft Factory.

Address: Naval Aircraft Factory, Philadelphia, Pa.; home, 2981 Yorkship Square, Camden, N. J.

Albert Clifford Baker

BAKER, ALBERT CLIFFORD, Aeronautical Engineer; born, Maidstone, England, June 6, 1897; son of James Baker and Elizabeth Baker; married, Elsie Covel, May 1, 1919.

Educated: Maidstone Technical & Engineering College; Engineering 1st Deg., 1914.

Aeronautical Activities: Transferred from Yeomanry to R.F.C., March 6, 1915; credited with destruction of 22 machines; discharged with rank of Major, Aug. 1919.

Flying Rating: Major, R.A.F.

War Service: Aug. 1914 to Aug. 1919.

Honors: Military Cross, Dec. 1914; Distinguished Flying Cross, 1917; Air Force Cross, 1917.

Address: 891 Burrard St., Vancouver, B. C.

Ralph Martin Tripcony

TRIPCONY, RALPH MARTIN, Aeronautical Engineer; born, Kent, Ohio, July 22, 1890; son of Richard Martin Tripcony and Flora (Waldron) Tripcony.

Educated: Kent High School, 1907; Mt. Union; Ohio State, Junior, 1914.

Professional: Draftsman, Engineering Department, B. F. Goodrich Co., Akron, Ohio, 1915-1916; 1916-1917, Draftsman, B. & W. Boiler Co., Barberton, Ohio; 1917-1918, Draftsman and Designer, Aeronautical Department, Goodyear Tire & Rubber Co., Akron, Ohio; 1918-1919, Division Foreman and Design Representative, Balloon Department, Goodyear Tire & Rubber Co., Akron, Ohio; 1919-1920, Draftsman and Designer, Aeronautical Department, Goodyear Tire & Rubber Co., Akron, Ohio; 1921, Aeronautical Designer and Engineer, U. S. Army Balloon School, Ft. Omaha, Nebr.

Aeronautical Activities: Extensive experience in design and production of nearly all types of spherical and observation balloons and airships, which have been built in this country, including field work and flying experience.

Member: Vice President, Airship Engineering Society, Dayton, Ohio.

Present Occupation: Project Engineer in charge of spherical and observation balloon and airship design, lighter-than-air section.

Address: McCook Field, Dayton, Ohio; home, 318 Lake St., Kent, Ohio.

William E. Huffman

HUFFMAN, WILLIAM E., Aeronautical Construction; born, Industry, Kans. July 19, 1891; son of William N. Huffman and Nora E. Huffman; married, Martha Schropp, May 10, 1919.

Educated: Public schools.

Aeronautical Activities: 1915-1916, Construction and flying spherical balloon; Dec. 1917 to June 1918, Flying Cadet; Instructor, Aerial Observation. June to Aug. 1918; Aeronautical Information Officer (U.S. Army), Aug. to Nov. 1918; Instructor, balloon maneuvering and construction, Nov. 1918 to April 1919; in charge of balloon hangar doing balloon and airship experimental work, April 1919 to April 1920; maneuvering officer and aerial observer, Philippine Islands (U.S. Army), April to Dec. 1920; Superintendent, Aero Construction, Dec. 1920 to date; Pilot, Spherical Balloon Race, July 1918, Ft. Omaha, Nebr.; Aide, Army and Navy Balloon Race, St. Louis, Sept. 1920.

Flying Rating: Spherical Balloon Pilot; Aerial Observer.

War Service: U.S. Army, Air Service, May 12, 1917 to Dec. 20, 1920.

Member: Airship Engineering Society.

Present Occupation: Superintendent, Aero Construction.

Address: McCook Field; home, 431 Bellevue Apt., Dayton, Ohio.

George Edwin Rumill

RUMILL, GEORGE EDWIN, Lieutenant U.S. N.R.F.; born, Mt. Desert Island, Me., Aug. 10, 1895 son of Edwin B. Rumill and Lettie A. Rumill.

Educated: Maine Central Institute, Pittsfield, Me.; Civil Engineering, University of Maine, 1916-1917.

Aeronautical Activities: Enrolled U.S.N.R.F., May 26, 1917; ground school, M.I.T., July 26, 1917; commenced flight training at Pensacola, Sept. 27, 1917; commissioned Ensign, Dec. 27. 1917; reported, R.N.A.S., Killingholme, England, Feb. 9, 1918; returned to U. S., Oct. 10, 1918; at Pensacola, Feb. 20, 1919 to March 29, 1919; inactive duty, March 30, 1919 to Sept. 1920; U.S.S. Shawmut, Sept. 1920 to date.

Flying Rating: Naval Aviator, No. 217, Oct. 30, 1917.

War Service: May 26, 1917 to March 30, 1919.

Honors: Special letter of commendation— "As pilot of a seaplane he carried out a large number of hazardous, war patrol flights in the vicinity of enemy coasts, with skill and daring".

Present Occupation: Lieut. (j.g.) and Prov. Lieut., U.S.N.R.F. (5).

Address: U.S.S. Shawmut, c/o Postmaster, New York; permanent, Indian Point, Me.

Frederick Richard Maxwell, Jr.

MAXWELL, FREDERICK RICHARD, Jr., Professor of Physics and Electrical Engineering; born, Tuscaloosa, Ala., June 15, 1889; son of F. R. Maxwell and Lucy Cochrane.

Educated: Tuscaloosa High School; B.S. 1911, University of Alabama; Mechanical Engineer 1912, University of Alabama.

Professional: Manager of Electrical Department, 1914, Manager, Gas Department 1915, Commercial Manager 1916, Assistant General Manager 1918, for Tuscaloosa Railway and Utilities Co.; Assistant Professor, Physics and Electrical Enginering, 1920, University of Alabama.

Aeronautical Activities: Student flyer, Oct. 1917; Naval Aviator, Feb. 1918; placed on Ground duty, May 1918; returned to Flight duty latter part of 1918.

Flying Rating: Naval Aviator No. 2125, Lieut. (j.g.) U.S.N.R.F.

War Service: U. S. Naval Reserve Corps, July 1917 to Feb. 1919.

Member: A.I.E.E.; Alabama Technical Association.

Present Occupation: Assistant Professor of Physics and Electrical Engineering.

Address: University, Ala.; home, 2703 Sixth St., Tuscaloosa, Ala.

Robert Morris Burtt

BURTT, ROBERT MORRIS, Student; born, West Newton, Mass., June 27, 1896; son of Edwin Palmer Burtt and Harriet Louise (Jerome) Burtt.

Educated: Brookline High School; Hotchkiss School; Columbia College (Journalism, 1923).

Aeronautical Activities: Enlisted, Air Service, Aug. 18, 1917; commissioned 2nd Lieut., May 18, 1918; graduated, Issoudun, France, Oct. 13, 1918; aerial gunnery, St. Jean de Monts; 28th Squadron (Pursuit); discharged, Feb. 19, 1919; passenger carrying, Caldwell Bros. Aerial Co. and Eastern Aircraft Corp., summer 1920.

Flying Rating: R.M.A., Aug. 13, 1918; Brevet Militaire, No. 17619, Aug. 13, 1918.

War Service: Aug. 18, 1917 to Feb. 19, 1919.

Member: New York Athletic Club; Pres., Columbia Aero Club; Sec.-Treas., Intercollegiate Flying Association; American Legion.

Present Occupation: Student.

Address: 617 West 115 St., New York City.

Andrew Humbert Scott

SCOTT, ANDREW HUMBERT, Mining Engineer; born, Los Angeles, Calif., July 9, 1887; son of Edward Bowes Scott, M.D. and Mary Scott.

Educated: Lincoln Grammar School, San Francisco; Sacremento High School; Stanford University; University of Nevada.

Professional: 10 yr. practical mining engineer.

Aeronautical Activities: Interested in building airship, 1912; commissioned 1st Lieut. San. Corps, Oct. 28, 1918; Emerson Field, S. C., Nov. 1918; Bolling Field, March 1919.

Flying Rating: Aerial Observer.

Books: Loss of Efficiency in Air Wash; Improved Wing Structure.

Member: Aero Club of America: Geological Society; American Chemical Society; American Association of Engineers; American Society for the Advancement of Science; Seismological Society of America; Meterological Society; Army Ordnance Association.

Present Occupation: Mining Engineer.

Address: Box 777, Lovelock, Nev.

Marie Blanchard Toncray

TONCRAY, MARIE BLANCHARD, Commercial Pilot; born, Shreveport, La., Feb. 24, 1902; daughter of Mr. and Mrs. J. M. Blanchard; married, Henry E. Toncray, Nov. 21, 1921 (while flying over New Orleans).

Educated: Oakdale High School.

Aeronautical Activities: With Gulf States Aircraft Co., 1921-1922.

Present Occupation: Flying for Gulf States Aircraft Co.

Address: 300 Spring St., Shreveport, La.; 2805 James Ave., Shreveport, La.

Flying Boat Lost at Sea

The commercial flying boat Miss Miami, HS2L type, Robert Moore pilot, enroute from Miami, Fla., to Bimini, Bahamas, was lost in the Gulf Stream in a storm on March 23. The boat carried five passengers, Mr. and Mrs. August Bulté, Mr. and Mrs. Lawrence E. Smith, all of Kansas City, and Mrs. J. S. Dixon of Memphis, Tenn.

A systematic search with a dozen flying boats from Miami, Key West and Palm Beach, including naval seaplanes and flying boats of the Aeromarine Airways (to whom the Miss Miami did not belong) failed to find a trace of the missing flying boat.

Pilot Moore was, however, picked up, clinging to some wreckage, by a passing steamer. It appears that the Miss Miami was forced to alight on account of engine trouble between Miami and Bimini, and that her passengers died of exposure while clinging to the up-turned boat.

The loss of the boat is attributed to the lack of a Federal law enforcing the inspection of aircraft by Charles F. Redden, president of Aeromarine Airways who sent a telegram to the Chairman of the House Committee on Interstate and Foreign Commerce, in which he said among others:

"The seaplane which is reported missing off the Florida coast, with five passengers aboard, has attracted wide comment as illustrating the perils of flight. This seaplane does not belong to the Aeromarine Airways fleet and should not be identified with our operations between Key West and Havana. Flying is just as safe today as traveling by rail, when rigid inspection of equipment is provided, either by private organization or by public authority. The fact that we have transported thousands of passengers from the mainland to Cuba without injury or loss of life, is explained by rigorous requirements and extensive facilities. These, however, are the exception in much of the general flying that is now going on. When a mishap occurs, all aviation gets the blame. Unless Congress passes, without delay, the Wadsworth Bill providing for inspection of machines and licensing of pilots and establishing a Bureau of Commercial Aeronautics in the Department of Commerce, aviation cannot progress as it should."

The Wragg Compound Aerofoil

The information which follows has been received from C. A. Wragg in reply to the request by H. D. Fowler (see AVIATION, Jan. 16, 1922) for data on the Wragg Compound Aerofoil.

"The enclosed data was obtained at the Bureau of Standards on a model having variable angle and camber. Although this model does not embody the variable area factor, which the writer believes is only warrantable when used in conjunction with variation of normal angle and camber, the high maximum lift coefficient of the wing in the closed position, which can be still further improved is significant and to the point.

"Mr. Fowler's comparison of the Wragg wing system, when closed, with the Howard Wright wing is hardly justifiable. The value of double-camber on the upper surface is not fully utilized, in the opinion of the writer, except in wings having very deep camber. The fundamental difference between the Howard Wright and the Wragg scheme is that the variable system is able to embody a much greater angle and camber in relation to the horizontal axis, because if the Howard Wright type were used with a deeper camber it would be utterly useless for speed. The Howard Wright wing has not a comparatively high maximum value of K_y, nor does the burble point occur at such a high angle as is possible with the variable system.

"With regard to the efficiency of the high-speed setting: Even if it were correct that "all aerofoils tested in tandem have shown reduced efficiency", it is not applicable to variable tandem systems. It is of course obvious that with a given W greater speed can only be obtained by a reduction of K_y, and the usual definition of efficiency, in the writer's estimation, is not tenable under the conditions of a compound aerofoil, as the aim is to a large extent simply to get low drag at the expense of lift, for speed, and high lift, irrespective of drag (even preferably with high drag) for landing.

COMPARISON OF RESULTS OF TESTS ON WRAGG COMPOUND WING AIRPLANE WITH OTHER MODELS

	M.p.h. test speed	Model area sq. ft.	Aspect ratio	Max. L/D	Max. Lift lb.	Max. Lift K_y	Min. drag lb.	Min. drag K_x	Authority
BIPLANE USING RAF6 18″ x 3″ Gap 3″ BE2 body only.	27.27	.75	6.0	9.44	1.48	.00265	.0625	.0001123	Br.A.C.A. 1915-16
CURTISS JN4 complete	30.0	.6666	6.8	7.2	1.5	.0025	.10	.0001667	N.A.C.A. 1st report
LWF-V without tail	25.0	.866	6.36 (aver.)	7.82	...	.0027	...	.00017	M.I.T. test 1916
WRAGG COMPOUND WING MODEL wings and body only. Wings closed.	30.0	.43597	3.78	7.55	1.8	.00472	.100	.00255	Bureau of Standards tests.
WRAGG COMPOUND WING MODEL Wings open	30.0	.43597	3.78 (for total chord)	9.3	1.44 (abt.)	.00367	.050 (abt.)	.001275	Bureau of Standards tests.

"It is claimed by the writer that the Wragg Compound Aerofoil not only embodies a maximum lift for landing and a minimum drag for speed flying, but also ideal stability characteristics when flying at the lowest possible values of K_y.

"Permit me to point out a typographical error in your printing of my letter of Jan. 16. In referring to the improvement on RAF6 I said "that such improvement was obtained by reduction of K_x as well as increase of K_y."

C. A. WRAGG.

Action on Fake Stock Promotion

"The danger of Fake Aircraft Stock Promotion" was the subject of a talk given by H. J. Kenner, Director, National Vigilance Committee, at the last semi-monthly luncheon of aeronautical executives held at the Café Boulevard, New York.

Mr. Kenner's organization is national in its scope, with headquarters at 110 West 40th Street, New York and twenty-two branches in the principal cities. It has been instrumental in the past in exposing fraudulent promotions and advertising in the automobile, tire, oil and other industries. Recently it has investigated certain doubtful stock promotions in the aeronautical industry.

Mr. Kenner urged the cooperation of the aircraft industry in reporting to the National Vigilance Committee, information on doubtful aircraft promotions. This information would be considered confidential and the informant's name would not be used in any way in the committee's investigations. S. S. Blythe urged that the Aeronautical Chamber of Commerce actively cooperate with the National Vigilance Committee to prevent financial pirates from fattening on the aircraft industry at the expense of ignorant investors.

Those attending the luncheon appeared impressed with the necessity for some active work along the lines suggested by Mr. Kenner and Mr. Blythe. As one man expressed it "We must kill off these confidence men if we want to retain the confidence of the public."

ARMY AND NAVY AIR NEWS

Air Service

Coats of Arms of Air Units.—Like every regiment of the Army and independent unit, the Air Service Groups and the Anti Aircraft Battalions will soon be provided with distinguishing colors or standards and coats of arms.

The coats of arms or badges will be indicative of the units, picturing feats of arms and recording history. Colored prints of the arms will be hung in the headquarters and the crest and arms proper will be used in the colors of the unit with the standard eagle and scroll carrying the name of the organization.

The first Air Service unit to secure its device is the Third Group, comprising the 8th, 13th (old 104th), 26th and 90th Squadrons. Its motto *Non Solum Armis*, translated, is "Not by Arms Alone."

The background of the shield is divided diagonally into the original colors of the Air Service, green and black, and over the dividing line is a band of ultramarine blue and golden orange the present colors of the corps. In the upper portion of the shield is a yellow cactus in commemoration of the first service of the Group along the Mexican Border in 1916.

Coat of Arms of the Third Group (Attack), Air Service

Around the border of the shield are nineteen black German crosses indicative of the number of German planes credited to the Group during the World War. The crest comprises a wreath of colors over which rises a bare arm, with the hand clenched, between two extended wings. In the coat of arms an ancient helmet with a scroll of plumes is placed, but this is not used in the colors of the Group.

The initial anti-aircraft unit to receive its arms is the 1st. Battalion; the crest is taken from the arms of James Monroe and consists of an eagle's head on the wreath of units colors, while the shield of silver and black is decorated with a thunderbolt penetrating the winged chariot wheel of Helios, and bears the sun. A saw tooth line divides the shield taken from Lord Delaware's arms, which were the basis of the old arms of the coast defense of the Chesapeake.

The shield tells in a pictorial way the aims of the battalion using the Greek Mythological story of Phaeton's fall when he undertook to drive the chariot of Helios, the sun, across the heavens, to please his mother and prove that he actually was the son of Helios. Phaeton had scarcely taken his father's place in the winged chariot, when the celestial steeds despising their weak driver, turned from their customary path and set everything afire. It is recorded in Mythology that the chariot came so near the earth, that Ethiopians were blackened. Zeus, fearing the destruction of everything, wrecked the chariot with a well-aimed bolt of lightening and sent it into the River Po, scoring, what is said to be, the first direct hit on an aerial target. The motto, translated, reads: "The way to the stars is not easy."

* * *

Army Orders.—Capt. Wm. F. Donnelly, A. S., has been relieved of his duties at Ellington Field, Houston, Tex., and detailed as Instructor of Air Service to the Indiana National Guard, with headquarters at Kokomo, Ind.

First Lieut. Clarence R. MacIver, Army Air Service, has been ordered from Kelly Field, San Antonio, Tex., to act as instructor of Air Service Minnesota National Guard, taking station at St. Paul, Minn.

Capt. Edmund W. Hill, Inf., and First Lieut. Benjamin R. McBride, Inf., have been transferred to the Air Service.

The transfer of First Lieut. Charles Rocheid Forrest, A. S., to the Field Artillery on March 9, 1922, with rank from July 1, 1920, is announced. He will proceed from Carlstrom Field, Fla., to Fort Benning, Ga., and report in person to the commanding officer of the 83rd Field Artillery for assignment to duty with that regiment.

First Lieut. John R. Morgan, A. S., has been ordered from Mather Field to the Letterman General Hospital, Presidio, for observation and treatment.

Four Naval Medical officers are undergoing courses of instruction at the Army School for Flight Surgeons.

First Lieut. Vincent J. Meloy, A. S., has been detached from duty at Kelly Field and detailed as instructor in Air Service with the Tennessee National Guard at Nashville.

First Lieut. Morton H. McKinnon has been relieved of duty at Fort Bliss, Tex.

First. Lieut. Edward L. Searl, Jr., A. S., has been directed to report in person, not less than three nor more than seven days prior to the date of sailing of the transport, to the commanding general Ninth Corps Area for temporary duty pending the departure of the transport scheduled to sail on or about April 5, 1922, for the Philippine Islands, and to sail on that transport for Manila.

Col. Chalmers G. Hall, A. S., now on temporary duty at Aberdeen Proving Ground, Aberdeen, Md., will upon completion of his airship training at Aberdeen Proving Ground, return to his proper station for conference with the Chief of Air Service, and upon completion of this duty will stand relieved from further duty in the office of the Chief of Air Service, Washington, D. C., and will then proceed to Scott Field, Belleville, Ill., take station and assume command of that field.

* * *

Kelly Field.—One of the airplanes of the 90th Squadron at Kelly Field has been specially equipped with radio, transmitting and receiving, together with an SCR72 amplifier. Two generators are used with a special change-over switch, which eliminates several articles as regularly installed with the service SCR73 set. Two antennas are used, one for the transmitting set and one for receiving, the system being known as duplex radio by which transmitting and receiving can be carried on at the same instant. The ship has been tested with the new high power radiophone of the First Wing, with good results, although it has not been possible to make distance tests as yet. The ship is the only one of its kind in the Eighth Corps Area at present. Radio music has been successfully transmitted from the ground to the ship at 4000 ft.

Disposal of Surplus Material.—The Chief of Air Service has made public the following indorsement by the Adjutant General of the Army of the policy followed regarding the disposal to the public of surplus airplanes, airplane materials and parts:

"Surplus and unserviceable airplane materials and parts will be disposed of in the manner prescribed for the disposal of any other surplus and unserviceable property, except that planes and parts thereof known to be, or believed to be, unsafe will be rendered unfit for flying purposes prior to their disposal, in accordance with instructions issued by the Chief of Air Service."

The policy set forth therein will govern the disposal of all Air Service property.

No aircraft, aircraft engine, or parts thereof which are known or believed to be unsafe for use as such will be sold until after such unsafe material has been so treated as to make it impossible to use it as aircraft or as any part of such craft.

It is desired to dispose of all surplus and unserviceable Air Service property as quickly as possible. Whenever a commanding officer has reason to believe that Air Service material is surplus and unserviceable, or, in the case of standard equipment, that it is unserviceable and not worth repairing, he will at once cause such material to be surveyed in accordance with existing regulations. Air Service material which is surplus but which, in the opinion of the commanding officer, is wholly serviceable will be reported on S.P.D. cards to the Chief of Air Service for disposition.

Surveying officers must have the necessary experience and knowledge to enable them to determine the condition of Air Service material upon which they act. Every surveying officer will include in his findings, statement as to whether the material is or is not safe to be used for flying purposes.

When aircraft or any parts thereof have been surveyed and reported unsafe for flying purposes, they will be so broken up as to make it impossible to use them for flying. Wings and tail surfaces, fuselages and landing gears will be sawn or broken so that the wooden parts cannot be used in aircraft. Metal fittings will be salvaged in the most economical manner. Should any of such fittings be known or believed to be unsafe for use in aircraft, they will be broken or otherwise plainly damaged so that no one will attempt to use them in aircraft. Airplane motors and spare parts when known or believed to be unserviceable and unsafe, will be broken up and sold as junk. The salvaging of all metals will be done in the most expeditious and economical manner.

Every precaution will be taken to prevent waste or unnecessary destruction of property and every effort made to insure the greatest financial return to the Government consistent with an orderly and rapid disposal of the property in question. It is known that many accidents have occurred due to the use by purchasers or others of old aircraft material, and it is intended to guard against such accidents in every way possible. No Air Service material which is really beyond question fit for use as such, will be destroyed, but any that is known or believed to be unsafe must be rendered unfit for flying use before it is disposed of by the United States.

* * *

Crissy Field.—The 316th Reserve Squadron have taken over the new quarters at Crissy Field. Members of this squadron are planning on a formal acceptance in the near future, which event will be coupled with appropriate ceremonies.

Lieut. B. S. Catlin, Jr., as pilot, and Private A. Hartner, as radio operator, recently made an altitude flight of 17,200 ft. in connection with the anti-aircraft practice of the Anti-aircraft Battalion of the Coast Defenses of San Francisco. Conditions were very favorable for the flight, and the airmen were able to keep in radio communication at all times with the battery for which they were simulating a target.

* * *

Carlstrom Field.—The total flying time at Carlstrom Field, Arcadia, Fla., from Jan. 1 to Dec. 31, 1921, was 19,830 hr. From June 1, 1920 to July 15, 1921, a total of 301 students reported to the field for training, 184 graduating and 98 failing to complete the course.

Sale of Surplus Equipment.—During the month of February the Army received $177,336.57 for the sale of Air Service surplus materials and property, which cost originally $310,382.93, a return of about 38 per cent.

Naval Aviation

Hampton Roads Naval Air Station.—During the past week thirty-five hangars were transferred from Camp Morrison to the Naval Base, for erection at other stations. As the work was done by men from the Air Station and Receiving Ship, it is estimated that a saving of about $2,000 was effected.

Lieut. F. B. Stump recently flew an F5L boat to Morehead City, N. C., Cape Hatteras and Cape Lookout, taking the District Communication Superintendent on a radio inspection trip. This would ordinarily have required a week, but was accomplished in one day.

The lighter-than-air detachment had no flying during the week, but unpacked all parachutes, inspected and aired them. Two coats of dope were sprayed on the C 7 envelope used in the helium test flights, which is now said to be ready for inflation with hydrogen.

The envelope of the C9 recently received from Coco-Solo C. Z. will be inflated with air and inspected next week. The car and fin surfaces of this airship were also received recently and stored. 32,000 cu. ft. of helium were recompressed during the week; and it is expected that the work will be completed within a short time. This was the gas used in the inflation of the C7 and shows the saving in using the gas over again, which is not possible with hydrogen. A new hydrogen plant is being erected.

About twenty-five men answered the first call for the Air Detachment base ball team. The basket ball team recently finished its season with an average of 1000 for the season.

Chief Machinist's Mate Keep A. Lauer of Goodwater, Ala., attached to the Hampton Roads Naval Air Station has been commended in shutting off the gas supply in a burning sea plane NC 7 at Hampton Roads on June 21, 1921.

The Board of Investigation which reported on the circumstances connected with the destruction of the NC 7 to the Department reported as follows:

"That, the action of Lauer, aviation machinist's mate, who climbed up by the burning motor to shut off the gasoline line when an explosion of the gasoline tank might have occurred at any time, which would probably have resulted in serious injury to him, shold be commended."

In his letter Secretary Denby said, "The Department takes pleasure in commending you for this exemplary conduct which was in keeping with the best traditions of the Naval Service."

Coming Aeronautical Events

AMERICAN

Apr. 30 — Spring Show and Opening Meet, Curtiss Field, Mineola, L. I.
May 30 — Fourth Annual Aircraft Exhibition, Logan Field, Baltimore, Md.
May 31 — National Balloon Race.
June 15-17 — Flying Meet, Monmouth, Ill.
Sept. 4 (about) — Detroit Aerial Water Derby, Detroit. (Curtiss Marine Flying Trophy Competition.)
Sept. 15 (about) — Detroit Aerial Derby, Detroit. (Pulitzer Trophy Race.)
Sept. 30 — First Annual Interservice Championship Meet. (In preparation.)

FOREIGN

August — Coupe Jacques Schneider. (Seaplane speed race.) Naples, Italy.
Aug. 6 — Gordon Bennett Balloon Race, Geneva, Switzerland.
Aug. 9-24 — Sparing and Gliding Competition, Gersfeld, Germany.
Sept. 22 — Coupe Henri Deutsch de la Meurthe. (Airplane speed race.) France.
American elimination trials, if required, to be held about Aug. 15, at Mitchel Field, L. I.

Aeronautical Briefs

G. W. Browne with Curtiss—The Curtiss Aeroplane & Motor Corp. has acquired the services of George W. Browne as the head of its Commercial Sales Department. Mr. Browne will be assisted in this work by F. W. Whitney.

G. W. Browne's office is located at Garden City.

• • •

One Hundred Years Ago.—Postmaster General Hubert Work thinks it is time, after 100 years, to publicly acknowledge the friendly advice of the editor of the Freeman's Journal (now called the Norristown, Pa., Herald) of March 1, 1822, given to the then Postmaster General, Return J. Meigs, Jr. The early editor wrote in the Freeman's Journal as follows:

"We would advise the Postmaster General to avail himself of the novel and very ingenious flying machine, invented by James Bennett, of Philadelphia, by which we conceive, the mails would be transported with much more celerity and their arrival at the places of de ..ation be much more certain than is the case at present."

In appreciation of what the Air Mail Service has done and in approval of its development, Postmaster General Work said: "If that was true then, it is true today, and I wish I might be able to advise this old editor that we are today using the flying machine with splendid results in transporting the mails with safety and celerity."

The records of 1833 in the Post Office Department show that a "wonderful feat" was performed in carrying the mail and news dispatches, by relays of horses every five miles, between Washington and New York, in 15 hr. It created the greatest enthusiasm along the way as the rider appeared in a cloud of dust and leaped to the saddle of another horse. The records of the Post Office Department also refer to the unfortunate death of one of the riders on this trip who was thrown from his horse. Thus, in the development of speed in carrying mails, human life was sacrificed, even in the use of horses. Last year 1,000,000 miles were flown in carrying the mails by air, with but one loss of life and that occurred on a plane not carrying mail.

Airway Plans of Mexico

A report from U. S. Asst. Trade Commissioner R. M. Connell, Mexico, D. F. transmitted to the Aeronautical Chamber by the Automotive Division, Bureau of Foreign and Domestic Commerce, gives the following information on airway opportunities in the Mexican Republic:

"The Mexican government appears to be much interested in the establishment of regular air schedules on several important routes in Mexico, for which they have signified their willingness to offer the usual inducements. The routes which have been determined upon as being economically desirable are as follows:—

"1. From Mexico City to Gaudalajara, then to Mazatlan by way of Tepic, and return by way of Durango. The postal department will pay for the transportation of mail over this route and the federal government will furnish a subsidy.

"2. From Mexico City to Tampico, direct, and return. Post office rates, and federal subsidy.

"3. From Vereruz to Campeche by way of Puerto Mexico and Carmen; return by the same route. Postal rates and the federal subsidy will be furnished for service to Campeche only as a railroad connects Campeche with Progreso, though it is thought that it would be frequently profitable to continue service as far as Progreso, in spite of the railroad. It has been indicated that the States of Veracruz and Tamaulipas would offer a monthly subsidy for the continuation of this line to Matamoras, though no federal subsidy could be expected.

"It is alleged that $300,000 would be sufficient capital for a company to maintain bi-weekly departures each way on all the above routes, including the original outlay for equipment."

The Compania Mexicana de Transportation Aerea, S. A., has relinquished its mail contract from Mexico City to Tampico, and is concentrating its service on the carrying of pay rolls, in the Tampico oil district.

Where to Fly

CALIFORNIA
SAN FRANCISCO, CALIFORNIA
EARL P. COOPER AIRPLANE & MOTOR CO.

ILLINOIS
CHECKERBOARD AIRPLANE SERVICE
FOREST PARK, ILLINOIS

INDIANA
One of the largest and best equipped flying fields in the United States.
CURTISS-INDIANA COMPANY
Kokomo, Indiana
ALL TYPES OF CURTISS PLANES.

MASSACHUSETTS
BOSTON AND SPRINGFIELD, MASS.
EASTERN AIRCRAFT CORP.
340 FIRST ST., BOSTON, MASS.

MINNESOTA
WHITE BEAR LAKE, MINN.
The Twin Cities' chief summer resort.
Harold G. Peterson Aircraft Company
SCHOOL OF AVIATION

NEW JERSEY NEW YORK AIR TERMINAL
800 Acres — 6 miles from Times Square.
Learn on ships that cannot tail spin. Planes rented $30. hr.
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FLYING STATION, ATLANTIC CITY, N. J.
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AEROMARINE AIRWAYS, INC.
Times Building, New York
11 Passenger Flying Cruisers -- 5 passenger, open and enclosed Flying Boats. Sightseeing Tours - Flights to Shore and Lake Resorts

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DAYTON, OHIO.
Supplies, Hangars, Shops and Field 1 Mile from Dayton limits.
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OREGON
LAND OR WATER FLYING
OREGON, WASHINGTON AND IDAHO AIRPLANE COMPANY
PORTLAND, OREGON

PENNSYLVANIA
Flying School and Commercial Aviation
Send for Circular
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PHILADELPHIA AERO-SERVICE CORPORATION
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